



Advances in XML Reporting

PLS ATUG June 2017

Eric Johnson, SDG&E & Ali Khavari, ASEC



PLS-CADD Integration at SDG&E



- All Transmission Projects Modeled in PLS-CADD
 - The Best available solution for large scale system modeling
- Build Cost Savings
 - Accuracy of SAPS FE Engine provides more efficient designs, reducing material costs
- Design Time Savings – Process Integration
 - PLS-CADD Design Specification
 - Custom Excel Calculators
 - **Custom Applications**

Project Drivers



- Greater CPUC Oversight
 - General Order 95 (CA Version of NESC)
- 2008 Electric Safety OIR
 - Focused on clearances, veg. management, visual inspections, intrusive pole inspection, joint-use and **pole loading**
- 2012 & 2014 GO 95 Modified Rules – Reports Available Upon Request
- 2016 CPUC implemented Safety Citation Program
- Increased Auditing
 - CPUC and Internal Stakeholders

SDG&E Requirements



Structure Z20740
Tie Line
Pole Usage 54 %

Structure Information
 Flaming
 Tower / Dead End / Cross Arm
 Line Angle
 About Span
 Back Span
 Latitude
 Longitude
 Elevation
 Project File Name
 Structure File Name
 Name

Pole Loading Summary
 Clearing Load Case: 02-19 Light Grade A in Requisition
 Calculated SF: 2.83
 Required SF: 2.83
 Material Capacity: 75 %
 Steel Structure Weight: 13,000
 Pole Label: Z20740
 Material: wood

Analysis Information
 Company Name
 Project Name
 Calculation Method By
 Program Used for Analysis
 Analysis Type
 Date of Analysis
 Pole Report Generator Version

Detailed Pole Loading Information

Pole Label (B)	Class	Material	Groundline (ft)	Uplift (lb)	Wind (lb)	Date Installed	Material Capacity %	Load Case	Attachment Height (ft) (B)	Number of Wires	Span Length (ft)	Rating Span (ft)	Allow. Weight (lb)
Z20740	TL	Wood	52.5	0	0	10/2008	75	02-19 Light Grade A in Requisition	35	1	0	0	0

Wire Information

Wire Label (B)	Wire Type	Upl. Weight (lb/ft)	Span Length (ft)	Attachment Height (ft) (B)	Number of Wires	Span Length (ft)	Rating Span (ft)	Allow. Weight (lb)
W1	1000	0.75	0	35	1	0	0	0

Insulator Information

Type	Voltage (kV)	Description	Direction (deg)	Attachment Height (ft)	Origin Pole	Uplage %	Calc SF	Req SF	Load Case
Span	00	1000	0	35	Z20740	0	0	0	02-19 Light Grade A in Requisition

Org and Cable Information

Type	Wire Type	Length (ft)	Direction (deg)	Attachment Height (ft)	Origin Pole	Uplage %	Calc SF	Req SF	Load Case
Span	1000	0	0	35	Z20740	0	0	0	02-19 Light Grade A in Requisition

Accessories and Equipment Information

Type	Description	Attachment Height (ft)	Origin Pole	Uplage %	Calc SF	Req SF	Load Case
Span	1000	35	Z20740	0	0	0	02-19 Light Grade A in Requisition

Structure Photos

- Applicable to T&D
- Easy to Read & Duplicate
- Single Output Page Summarizing
 - Structure Information
 - Attachment Information
 - Loading Cases
 - Structure Photos
 - Structure Usage and Safety Factors
- Bulk Output Sheet
 - Imported into database (PIDS – Pole Information Data System)
- Easily Created from PLS-CADD Models



PLS Data Source: 2017



- PLS-CADD Version 14.4
 - Structure Check Details Tag
 - Properties, Geometry, Loading and More!

```

<structure_check_details>
  <creator application="PLS-POLE"/>
  <cabl planame="2-part Insulator Connectivity"/>
  <cabl planame="Bree Connectivity"/>
  <cabl planame="CAM Connectivity"/>
  <cabl planame="Clamp Insulator Connectivity"/>
  <cabl planame="Clamp Properties"/>
  <cabl planame="Connections and Anchors Check (forces)"/>
  <cabl planame="Connections and Anchors Check (moments)"/>
  <cabl planame="Davit Arm Connectivity"/>
  <cabl planame="FRP Pole Connectivity"/>
  <cabl planame="FRP Pole Properties"/>
  <cabl planame="Guy Connectivity"/>
  <cabl planame="Guy Strain Insulator Connectivity"/>
  <cabl planame="Heat Connectivity"/>
  <cabl planame="Heat Properties"/>
  <cabl planame="Post Insulator Connectivity"/>
  <cabl planame="Steel Pole Connectivity"/>
  <cabl planame="Steel Pole Properties"/>
  <cabl planame="Suspension Insulator Connectivity"/>
  <cabl planame="Tubular Davit Arm Connectivity"/>
  <cabl planame="Tubular X-arm Connectivity"/>
  <cabl planame="Wood Pole Connectivity"/>
  <cabl planame="X-arm Connections"/>
  <cabl planame="X-arm Connectivity"/>
  <cabl planame="X-arm Properties"/>
  <cabl planame="2-Part Insulator Properties"/>
  <cabl planame="Base Plate Properties"/>
  <cabl planame="Base Properties"/>
  <cabl planame="Clamp Properties"/>
  <cabl planame="Clamp Properties"/>
  <cabl planame="Concrete Pole Properties"/>
  <cabl planame="Davit Properties"/>
  <cabl planame="Detailed Laminated Wood Properties"/>
  <cabl planame="Detailed Wood Properties"/>
  <cabl planame="FRP Pole Properties"/>
  <cabl planame="Guy Strain Insulator Properties"/>
  <cabl planame="Laminated Wood Pole Properties"/>
  <cabl planame="Post Properties"/>
  <cabl planame="Post Properties"/>
  <cabl planame="Pole Steel Properties"/>
  <cabl planame="Steel Tube Properties"/>
  <cabl planame="Steel Tube Properties"/>
  <cabl planame="Strain Properties"/>
  <cabl planame="Suspension Properties"/>
  <cabl planame="Tubular Davit Properties"/>
  <cabl planame="Tubular X-arm Steel Properties"/>
  <cabl planame="Tubular X-arm Steel Properties"/>
  <cabl planame="Wood Pole Properties"/>
  <cabl planame="X-arm Properties"/>
  <cabl planame="Detailed Concrete Pole Usages"/>
  <cabl planame="Detailed Davit Arm Usages"/>
  <cabl planame="Detailed FRP Pole Usages"/>
  <cabl planame="Detailed Laminated Wood Pole Usages"/>
  <cabl planame="Detailed Laminated Wood Pole Usages"/>
  <cabl planame="Detailed Pole Loading Data"/>
  <cabl planame="Detailed Steel Pole Usages"/>
  <cabl planame="Detailed Tubular Davit Arm Usages"/>
  <cabl planame="Detailed Tubular X-arm Usages"/>
  <cabl planame="Detailed Wood Pole Usages"/>
  <cabl planame="Detailed X-arm Usages"/>
  <cabl planame="Summary of 3-part, Concrete and Usages"/>
  <cabl planame="Summary of Base Plate Usages by Load Case"/>
  <cabl planame="Summary of Base Forces and Usages"/>
  <cabl planame="Summary of Brace Usages by Load Case"/>
  <cabl planame="Summary of Clamp Capacities and Usages"/>
  <cabl planame="Summary of Clamp Capacities and Usages"/>
  <cabl planame="Summary of Concrete Pole Usages by Load Case"/>
  <cabl planame="Summary of Concrete Pole Usages by Load Case"/>
  <cabl planame="Summary of FRP Pole Usages by Load Case"/>
  <cabl planame="Summary of FRP Pole Usages by Load Case"/>
  <cabl planame="Summary of FRP Pole Usages and Usages"/>
  <cabl planame="Summary of Guy Strain Usages by Load Case"/>
  <cabl planame="Summary of Guy Tensions and Usages"/>
  <cabl planame="Summary of Guy Usages by Load Case"/>
  <cabl planame="Summary of Insulator Usages"/>
  <cabl planame="Summary of Laminated Wood Pole Usages by Load Case"/>
  <cabl planame="Summary of Mast Usages"/>
  <cabl planame="Summary of Maximum Usages by Load Case"/>
  <cabl planame="Summary of Post Capacities and Usages"/>
  <cabl planame="Summary of Steel Pole Usages by Load Case"/>
  <cabl planame="Summary of Strain Capacities and Usages"/>
  <cabl planame="Summary of Suspension Capacities and Usages"/>
  <cabl planame="Summary of Tubular Davit Usages by Load Case"/>
  <cabl planame="Summary of Tubular X-arm Usages by Load Case"/>
  <cabl planame="Summary of Tubular X-arm Usages by Load Case"/>
  <cabl planame="Summary of Wood Pole Usages by Load Case"/>
  <cabl planame="Summary of X-arm Usages by Load Case"/>
  <cabl planame="Summary of X-arm Usages by Load Case"/>
  <cabl planame="Arm Geometry and Bolt Holes"/>
  <cabl planame="Attachment Labels and Holes Relative to"/>
  <cabl planame="Base Plate Results by Term Line"/>
  <cabl planame="Base Plate"/>
  <cabl planame="CAM Library"/>
  <cabl planame="Equipment Joint, Tensions and Reactions"/>
  <cabl planame="Equipment Library"/>
  <cabl planame="Foundation Strength"/>
  <cabl planame="Intermediate Spacing and Bolt Holes"/>
  <cabl planame="Intermediate Spacing and Bolt Holes"/>
  <cabl planame="Intermediate Joints"/>
  <cabl planame="Intermediate Joints and Bolt Holes"/>
  <cabl planame="Intermediate Joints Relative to the Origin"/>
  <cabl planame="Loads At Guy Attachments For All Load Cases"/>
  <cabl planame="Loads At Insulator Attachments For All Load Cases"/>
  <cabl planame="Loads At Insulator Attachments For All Load Cases"/>
  <cabl planame="Moment Capacity Diagram"/>
  <cabl planame="Overturning Moments For User Input Concentrated Loads"/>
  <cabl planame="PLS-CAD Link Cable Sets"/>
  <cabl planame="Relative Attachment Labels and Holes For"/>
  <cabl planame="Relative Attachment Labels and Holes For"/>
  <cabl planame="Vector Load Cases"/>
  <cabl planame="Wood Pole Defects"/>
  </creator>
</root>
</structure_check_details>
    
```



PRG Updates



2015

- Windows Forms
- Complex Wizard
- Standalone User Manual
- Manual Updating


The screenshot shows the 'Pole Report Generator' application window. It features a 'File' menu and a 'General Information' section. The 'General Info' section includes fields for 'Company Performing Analysis' (ASEC Inc), 'Primary Tie Line Name or Circuit Number' (TL 1), 'Company Contact Email' (Engineer@asec-engineers.com), and 'Calculation Performed By' (Engineer). The 'Set Number Definition' section has fields for 'Transmission' (1-6, 11-16, 21-26), 'Communication' (40-49), and 'Span Guys' (50-58). The 'Analysis Type' section has radio buttons for 'Ruling Span' (selected), 'Finite Element L2', 'Finite Element L3', and 'Finite Element L4'. The 'Structure Comment Number Definition' section has fields for 'Structure Number' (1) and 'Framing' (2). At the bottom, it shows 'PLS CADD Standard: SDGE Transmission' and navigation buttons '< Back' and 'Next >'. The title bar reads 'Pole Report Generator 3.1.7'.

 < 5 Users

2017

- WPF
- Single Page Application
- Integrated Help / Instructions
- Automatic Updating

The screenshot shows the 'Pole Report Generator 3.1.7' application window in a modern WPF style. It features a 'File' menu, a 'Structure Details' section, and a 'Pole Report' section. The 'Structure Details' section includes a table with columns for 'Structure Number', 'Tie Line Name', 'Span Remarks', 'Structure Circumference (ft)', and 'Notes'. The 'Pole Report' section includes a table with columns for 'Pole Number', 'Date', 'Grounding Remarks', 'Pole Property Label', 'Pole Load Code', and 'Overhead Label'. The 'Structure Cable Definition' section includes a table with columns for 'Span Length (ft)', 'Label', 'Pole 1, Pole 2', 'Attachment height Pole 1 (ft)', and 'Attachment height Pole 2 (ft)'. The 'Structure Image Preview' section includes a grid of images. The title bar reads 'Pole Report Generator 3.1.7'. The interface is more complex and data-rich than the 2015 version.

 ~40 Users



General Info



Structure **Z20740**
Tie Line **TL**
Pole Usage **54 %**

Analysis Information

<i>Company Performing Analysis</i>	Company Name
<i>Calculation Performed By</i>	First Last
<i>Program Used for Analysis</i>	PLS-CADD
<i>Analysis Type</i>	Finite Element L2
<i>Date of Analysis</i>	5/18/2017
<i>Pole Report Generator Version</i>	3.2

Structure Information

<i>Framing</i>	69KV SC YPI
<i>Tangent / Dead End</i>	Dead End
<i>Line Angle</i>	-68°
<i>Ahead Span</i>	321 ft
<i>Back Span</i>	329 ft
<i>Latitude</i>	32.99671753°
<i>Longitude</i>	-117.27252985°
<i>Elevation</i>	70 ft
<i>Project File Name</i>	tl660-z20740-z24481 cmp.xyz
<i>Structure File Name</i>	z20740_existing_ca.pol
<i>Notes</i>	69KV SC YPI : SINGLE CIRCUIT DEADEND

Pole Loading Summary

<i>Governing Load Case</i>	G.O.95 Light Grade A at Replacement
<i>Calculated SF</i>	7.03
<i>Required SF</i>	2.63
<i>Material Capacity</i>	70 %
<i>Date Intrusive Record</i>	1/1/2010
<i>Pole Label</i>	Z20740
<i>Material</i>	Wood



Detailed Pole Loading



Detailed Pole Loading Information

<i>Pole Label</i>	<i>Height (ft.)</i>	<i>Class</i>	<i>Material</i>	<i>Groundline Circum. (in.)</i>	<i>Embed. (ft.)</i>	<i>Date Intrusive</i>	<i>Material Capacity %</i>	<i>Load Case</i>	<i>Ground Line Moment (ft-k)</i>	<i>Pole Usage %</i>	<i>Calc SF</i>	<i>Req SF</i>	<i>Max Usage Location (ft)*</i>
Z20740	75	1	DF - Douglas Fir	52.5	9.5	1/1/2017	70	G.O.95 Light Grade A at Replacement	1232	54	4.9	2.6	40.3
Z20740	75	1	DF - Douglas Fir	52.5	9.5	1/1/2017	70	Known Local Wind Light 65 MPH Grade A at Replacement	884	19	5.9	1.1	37.5

Wires



Wire Information

Wire Tension Condition | 60: Initial Condition Max Tension

Voltage (kV)	Wire Type	Unit Weight (lbs/ft.)	Diameter (in.)	Direction (deg)**	Attachment Height*** (ft.)	Number of Wires	Span Length (ft.)	Ruling Span (ft.)	Tension (lbs.)
69	Rook Acsr Aw	0.79	0.98	125	65	1	328	477	4054
69	Rook Acsr Aw	0.79	0.98	123	58	1	328	477	3999
69	Rook Acsr Aw	0.79	0.98	125	51	1	328	477	3165
12	4-O Awg 7 Copper	0.65	0.52	124	38	1	108	107	3624
12	4-O Awg 7 Copper	0.65	0.52	124	38	1	108	107	3624
12	4-O Awg 7 Copper	0.65	0.52	124	38	1	106	107	3624
12	4-O Awg 7 Copper	0.65	0.52	124	38	1	106	317	1551
12	4-O Awg 7 Copper	0.65	0.52	237	40	1	102	102	1242
12	4-O Awg 7 Copper	0.65	0.52	237	40	1	102	102	1242
12	4-O Awg 7 Copper	0.65	0.52	236	40	1	100	102	1242
12	#2-3 Copper	0.20	0.32	237	40	1	101	101	287
69	Rook Acsr Aw	0.79	0.98	235	58	1	321	306	1561
69	Rook Acsr Aw	0.79	0.98	237	65	1	321	306	1287
69	Rook Acsr Aw	0.79	0.98	235	51	1	321	306	2128
	1In Lashed Comm	0.37	1.00	237	25	1	99	99	112
	3 8-7 Strand Ehs Steel	0.27	0.36	124	34	1	107	107	318
	3 8-7 Strand Ehs Steel	0.27	0.36	124	34	1	107	107	336

Insulators



Insulator Information

Type	Voltage (kV)	Description	Direction (deg)	Attachment Height (ft.)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	218	65	Z20740	37	5.36	2	G.O.95 Light Grade A at Replacement
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	323	65	Z20740	15	13.11	2	Known Local Wind Light 65 MPH Grade A at Replacement
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	218	58	Z20740	38	5.28	2	G.O.95 Light Grade A at Replacement
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	323	58	Z20740	18	10.82	2	G.O.95 Light Grade A at Replacement
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	218	51	Z20740	33	6.07	2	G.O.95 Light Grade A at Replacement
Strain	69	69kV,deadend,25k,ACSR,dwg.19240	323	51	Z20740	26	7.71	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	315	40	Z20740	25	7.88	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	315	40	Z20740	25	7.86	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	315	40	Z20740	7	26.77	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	315	40	Z20740	25	7.85	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	225	38	Z20740	35	5.74	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	225	38	Z20740	35	5.73	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	225	38	Z20740	30	6.61	2	G.O.95 Light Grade A at Replacement
Strain	12	12kV DE SF=1	225	38	Z20740	58	3.46	2	G.O.95 Light Grade A at Replacement

Guys and Cables



Guy and Cable Information

+Length = Lead Length for Span and Down Guys

Type	Wire Type	Length* (ft.)	Direction (deg)	Attachment Height (ft.)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
Down	7/16" 7 Strand EHS SDG&E	34	142	65	Z20740	22	6.0	1.3	Known Local Wind Light 65 MPH Grade A at Replacement
Down	7/16" 7 Strand EHS SDG&E	34	142	55	Z20740	31	4.3	1.3	G.O.95 Light Grade A at Replacement
Down	7/16" 7 Strand EHS SDG&E	34	142	45	Z20740	34	3.9	1.3	G.O.95 Light Grade A at Replacement
Down	7/16" 7 Strand EHS SDG&E	37	36	64	Z20740	39	3.4	1.3	G.O.95 Light Grade A at Replacement
Down	7/16" 7 Strand EHS SDG&E	37	36	58	Z20740	38	3.6	1.3	G.O.95 Light Grade A at Replacement
Down	7/16" 7 Strand EHS SDG&E	37	37	51	Z20740	41	3.3	1.3	G.O.95 Light Grade A at Replacement
Down	3/8" 7 Strand EHS SDG&E	37	36	37	Z20740	50	2.7	1.3	G.O.95 Light Grade A at Replacement
Down	3/8" 7 Strand EHS SDG&E	33	141	35	Z20740	25	5.3	1.3	G.O.95 Light Grade A at Replacement
Down	3/8" 7 Strand EHS SDG&E	36	37	35	Z20740	49	2.7	1.3	G.O.95 Light Grade A at Replacement

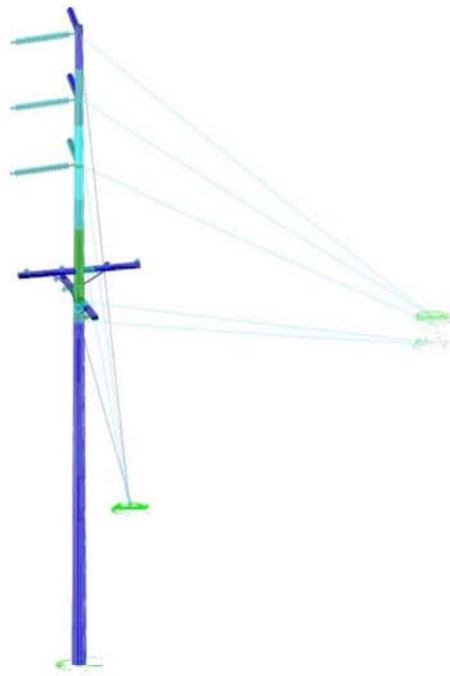
Crossarms and Equipment



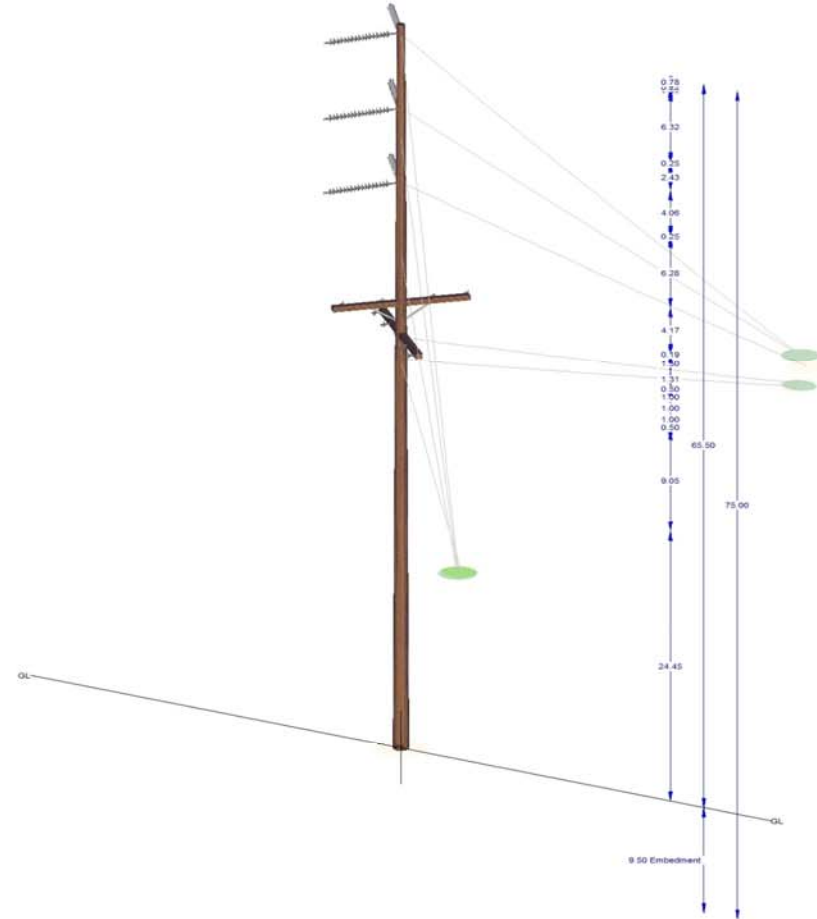
Crossarm and Equipment Information

Type	Description	Attachment Height (ft.)	Origin Pole	Usage %	Calc SF	Req SF	Load Case
X-Arm	12'x(2)3.625 x 5.625 mod	38	Z20740	61	2.2	1.3	G.O.95 Light Grade A at Replacement
X-Arm	12'x(2)3.625 x 5.625 mod 2	40	Z20740	26	5.1	1.3	G.O.95 Light Grade A at Replacement

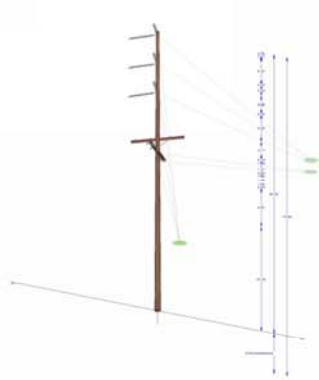
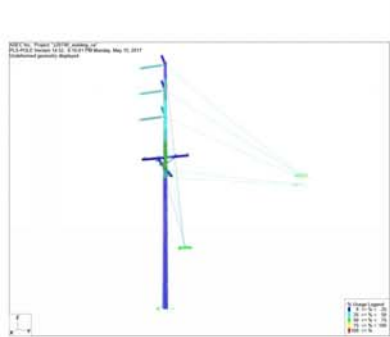
PLS Graphics



% Usage Legend
0 <= % < 25
25 <= % < 50
50 <= % < 75
75 <= % < 100
100 <= %



Graphics + Photos



Client: SDGE
Date: 07/20/2010
Time: 13:40:48

Electric - San Diego
California Zone 8
E: 8249190.071
N: 1643280.002

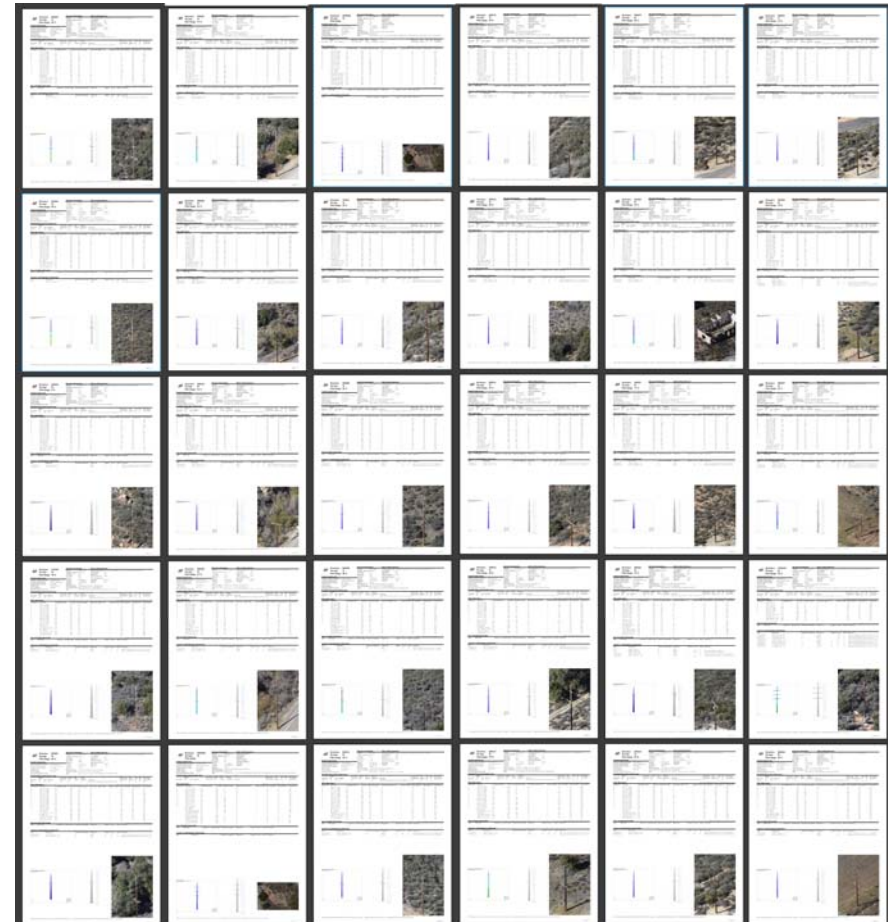
SDGE
Network Mapping
Smart Grid Systems



Bulk Reporting



Structure Number	Include in Reports	Title	Site Inactive	Surrounding Circumference (Feet)	Notes	Material	Quantity (ft)
Z29246	TL	TL		89.7	88KV Single Circuit Tubular Steel P	8	
Z29247	TL	TL		89.7	88KV Single Circuit Tubular Steel P	8	
Z29248	TL	TL		89.7	88KV Single Circuit Tubular Steel P	8	
Z143134	TL	TL		89.4	88KV Single Circuit Six Pole Tange	8	
Z40401	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40421	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40422	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40423	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40424	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40425	TL	TL		76.2	88KV Single Circuit Six Pole Tange	8	
Z40444	TL	TL		82.5	88KV Single Circuit Six Pole Tange	8	
Z40465	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40480	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40501	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40502	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40503	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40504	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40505	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40506	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40507	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40508	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40509	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40510	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40511	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40512	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40513	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40514	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40515	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40516	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40517	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40518	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40519	TL	TL		80.8	118KV Single Circuit Tubular Steel	8	
Z40520	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40521	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40522	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40523	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40524	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40525	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40526	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40527	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40528	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40529	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40530	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40531	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40532	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40533	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40534	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40535	TL	TL		87.7	118KV Single Circuit Tubular Steel	8	
Z40536	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40537	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40538	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40539	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40540	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40541	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40542	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40543	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40544	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40545	TL	TL		80.8	118KV Single Circuit Tubular Steel	8	
Z40546	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40547	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40548	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40549	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40550	TL	TL		87.7	88KV Single Circuit Six Pole Tange	8	
Z40551	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	
Z40552	TL	TL		80.8	88KV Single Circuit Six Pole Tange	8	



Additional Benefits



- Provides QA/QC
 - Modeling Set Up:
 - Schema File
 - Set & Phase Numbering
 - Criteria File
 - Load Cases
 - GO95 Loading District
 - Known Local Wind District

	Structure Number	Automatic Structure Group Membership	Manual Structure Group Membership
1	Z201091	'All', 'Has DE'	
2	Z731319	'All', 'No DE'	
3	Z131804	'All', 'No DE'	
4	Z731324	'All', 'No DE'	
5	Z731318	'All', 'Has DE'	
6	Z230780	'All', 'Has DE'	'GO95HVY_B_REP' 'KLN65LT_A_REP'
7	P19226726	'All', 'Has DE'	
8	Z230781	'All', 'Has DE'	'GO95LT_A_REP', 'KLN65LT_A_REP'

STRUCTURE GROUP DEFINITION ERROR

At least one structure has an invalid structure group assignment.

Automatically Generate structure groups?

(Copy and Paste results into the Manual Structure Group Membership Column of the Structure Staking Table)

Yes No

```
1
2
3
4
5
6 'GO95LT_A_REP', 'KLN65LT_A_REP'
7
8 'GO95LT_A_REP', 'KLN65LT_A_REP'
9
10
11
12
13
14
15
```

	Structure Number	Automatic Structure Group Membership	Manual Structure Group Membership
1	Z201091	'All', 'Has DE'	
2	Z731319	'All', 'No DE'	
3	Z131804	'All', 'No DE'	
4	Z731324	'All', 'No DE'	
5	Z731318	'All', 'Has DE'	
6	Z230780	'All', 'Has DE'	'GO95LT_A_REP' 'KLN65LT_A_REP'
7	P19226726	'All', 'Has DE'	
8	Z230781	'All', 'Has DE'	'GO95LT_A_REP', 'KLN65LT_A_REP'
9	Z230770	'All', 'Has DE'	
10	DIST TAP	'All', 'Has DE'	
11	Z230759	'All', 'No DE'	
12	Z230762	'All', 'Has DE'	
13	COMM TAP	'All', 'Has DE'	
14	SECONDARY	'All', 'Has DE'	
15	P215714	'All', 'Has DE'	

Process Integration



- Pole Reporting Integration
 - 60% Design - PRG Report and PLS-CADD Long Report
 - 90% Design - PRG Report and PLS-CADD Long Report
 - Final Design - PE Stamped PRG Report Only
- PIDS Database
 - Additional spreadsheet and file renaming to prepare for database upload

Questions

Single Page Report

Integrated QA / QC

Transmission & Distribution

Bulk Output sheet

Compatible with PLS 14.4 and later

Intuitive User Experience

Automatic Updating

SDGE Structure **Z20740**
Tie Line **TL**
Pole Usage **54 %**

Structure Information
Company Name: SDGE SC VPI
Framing: Dead End
Tangent / Dead End: -68"
Line Angle: 321 Ft
Ahead Span: 329 Ft
Back Span: 327.9971753"
Latitude: -117.21252985"
Longitude: 70 Ft
Elevation: 1660-220740-234881 cmp-992
Project File Name: 220740_loading_LA.ppt
Structure File Name: 688V SC VPI : SINGLE CIRCUIT DEADEND
Notes:

Pole Loading Summary
Governing Load Case: G.O.95 Light Grade A at Replacement
Calculated SF: 7.03
Required SF: 2.63
Material Capacity: 70 %
Date Intrusive Record: 1/17/2000
Pole Label: Z20740
Material: Wood

Analysis Information
Company Name: PLS-CADD
Calculation Performed By: Finite Element L2
Analysis Type: 5/8/2017
Date of Analysis: 3.3
Pole Report Generator Version: 3.3

Detailed Pole Loading Information
Pole Label: Z20740
Height (ft): 75
Class: 1
Material: DF - Douglas Fir
Groundline Circum (ft): 52.5
Embed (ft): 9.5
Date Intrusive: 1/17/2000
Material Capacity: 70
Load Case: G.O.95 Light Grade A at Replacement
Known Local Wind Light G5 5Mph Grade A at Replacement

Wire Information
Voltage (kV): 68
Wire Type: Rock Acry Ase
Unit Weight (lb/ft): 0.79
Diameter (in): 0.98
Direction (deg): 58
Attachment Height (ft): 46
Number of Wires: 1
Span Length (ft): 329
Tension (lb): 477

Insulator Information
Type: Strain
Voltage (kV): 68
Description: 68KV deadend 25A AC308 dwg 18240
Direction (deg): 278
Attachment Height (ft): 65
Origin Pole: 220740
% Calc SF: 1.36
Req SF: 2
Load Case: G.O.95 Light Grade A at Replacement

Guy and Cable Information
Type: Down
Wire Type: 3/8" 7 Strand EHS SSGAE
Length (ft): 54
Direction (deg): 142
Attachment Height (ft): 55
Origin Pole: 220740
Usage %: 22
Calc SF: 4.0
Req SF: 1.3
Load Case: Known Local Wind Light G5 5Mph Grade A at Replacement

Crossarm and Equipment Information
Type: X-Arm
Description: 12x12x1625 x 1.625 mod
Attachment Height (ft): 26
Origin Pole: 220740
Usage %: 61
Calc SF: 2.2
Req SF: 1.3
Load Case: G.O.95 Light Grade A at Replacement



Thank You!



For more information, please visit
www.polereportgenerator.com

Thank you for your attention,

Eric Johnson, SDG&E
ecjohnson@semprautilities.com

Ali Khavari, ASEC Inc.
akhavari@asec-engineers.com

